

Automatic Water Strainer

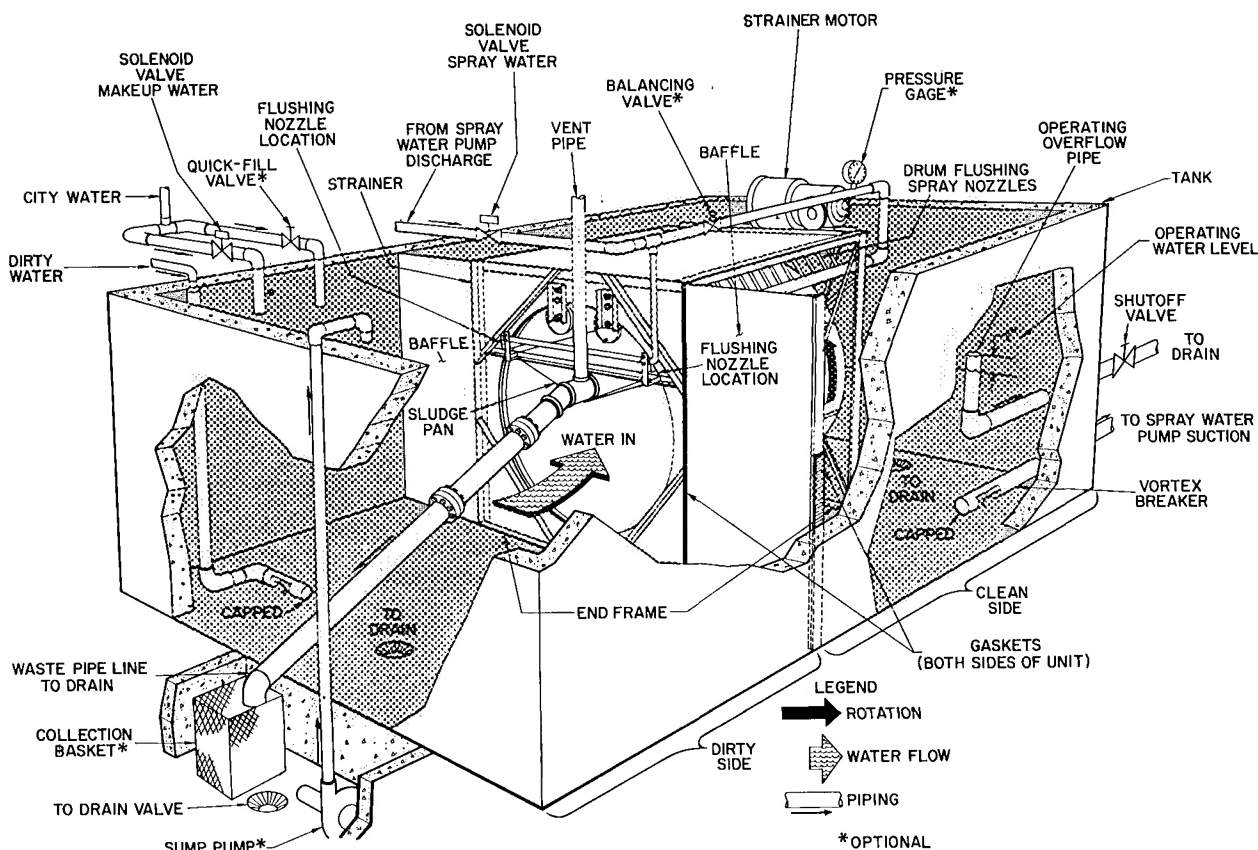


Fig. 1 - Typical Automatic Water Strainer Installation

UNIT DESCRIPTION

The 29D Automatic Water Strainer cleans foreign matter from the return water of a Rotaspray® system. Figure 1 shows a typical installation.

OPERATING CYCLE

Water enters the open end of the strainer drum and passes outward thru the perforated skin. Foreign matter is screened out of the water, and covers the inside surface of the drum causing the water level to rise on the dirty side of the tank. The water level on the clean side rises until it reaches the height of the high side electrode A (Fig. 2). This sets the strainer into operation. The drum begins to rotate and the drum flushing sprays are turned on. The dirty portion of the drum passes under the sprays, and foreign matter is flushed from the drum into the sludge pan. The

pan flushing sprays wash the foreign matter from the pan into a drain or a perforated collection basket. (The water drains from this perforated basket into a sump, and can be returned to the dirty side of the tank by a small auxiliary pump.) After the drum is cleaned of foreign matter, the water levels equalize, and the strainer stops after the timed operating cycle.

When the water falls below the low side electrode B level (Fig. 2) the strainer starts to protect the pump suction when:

1. The "Rotaspray" units evaporate water, causing the water level on the clean side to drop without a corresponding rise in water level on the dirty side.
2. Changes in the system water flow requirements suddenly drop the water level in the clean side of the tank.
3. The high side electrode fails to operate.

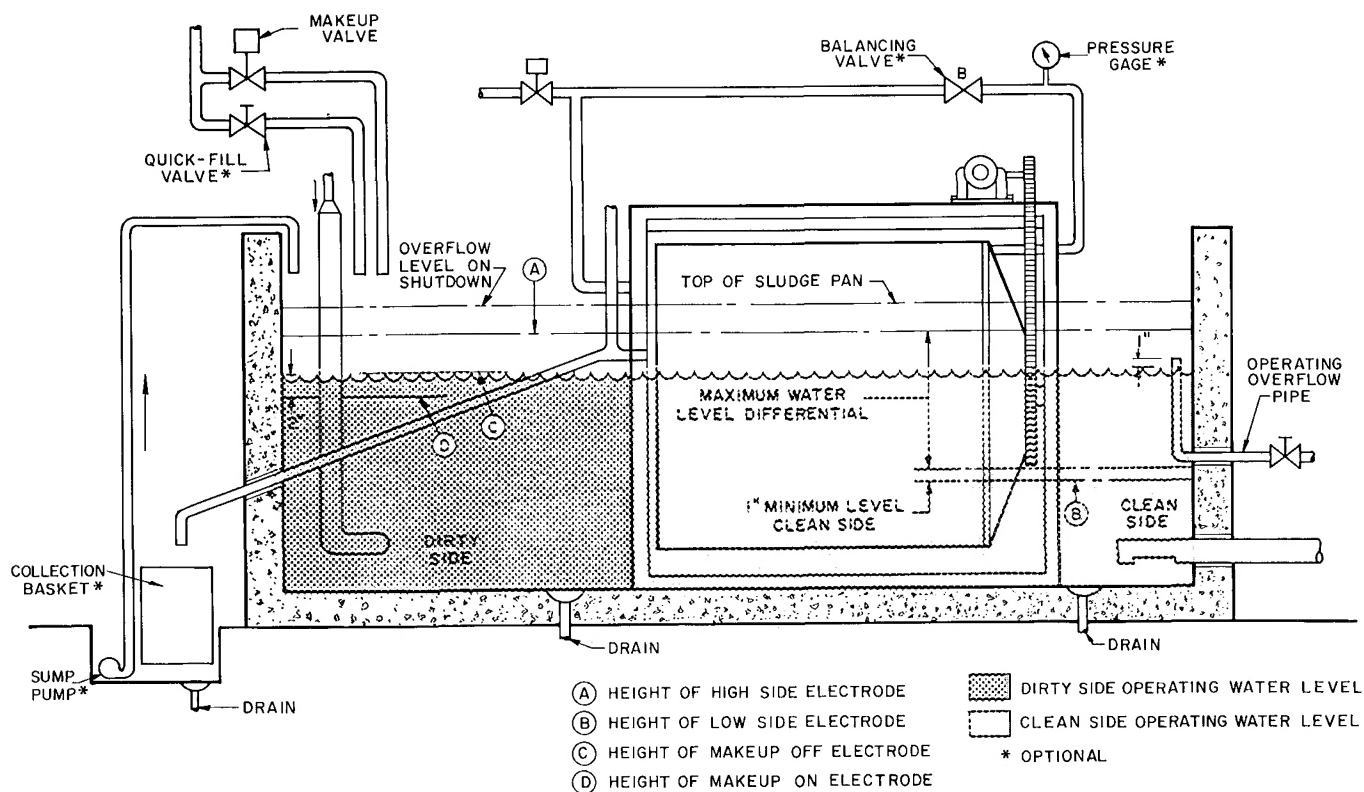


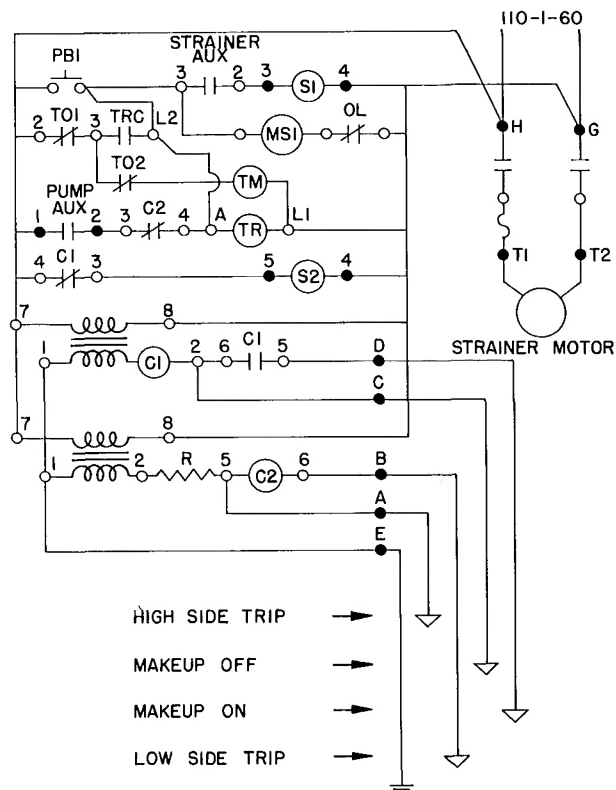
Fig. 2 - Water Levels

CONTROL CIRCUIT

Automatic Operation - The water strainer control circuit (Fig. 3) consists of a timer and level controller. The control circuit is wired thru an auxiliary contact on the recirculated or chilled water pump starter. If the fused disconnect switch is closed, the control circuit is activated when the pump starts. The strainer is then controlled automatically by the high or low side electrode. When either electrode is energized, the control circuit is completed. This starts the drive motor, opens the spray water solenoid valve, and trips the timer.

Normally, as the strainer begins to operate, the water levels begin to equalize, de-energizing the electrode. However, the timer contacts remain closed for the preset timed cycle to maintain strainer operation. The length of the timed cycle can be adjusted to suit job requirements. At the end of the timed cycle, the timer contacts open. This normally stops the drive motor, and closes the spray water solenoid valve. However, if the tank water level is too low, the low side electrode will maintain the makeup valve open for several minutes, until the water level rises enough to de-energize the low side electrode.

Manual Operation - A momentary contact switch is provided to bypass the automatic tank level controller and operate the water strainer for one timed cycle. This switch permits operation of the strainer when the water pump is shut down.



NOTE: For wiring the unit use the diagram that comes with the unit

- | | |
|-------------------------------|---------------------------------|
| C1 - Relay Coils | S2 - Makeup Wtr Solenoid Valve |
| C2 - Relay Coils | TM - Timer Motor |
| MS1 - Strainer Motor Starter | TR - Timer Relay Coil |
| PB - Push Button | ○ - Terminals on Components |
| S1 - Spray Wtr Solenoid Valve | ● - Terminals on Terminal Strip |

Fig. 3 - Elementary Control Circuit

LUBRICATION

Main Shaft Bearing - Lubricate strainer main shaft bearing with waterproof grease see Table 1. This is a sleeve bearing and does not contain a grease reservoir. Determine frequency of lubrication from operating conditions. Lubricate approximately every 500 hr or three months, whichever is earlier.

Drive Chain - Lubricate drive chain with waterproof grease whenever main shaft bearings are lubricated. See Table 1.

Table 1 - Drive Chain Grease Guide

HUMBLE OIL CO.	Nebula EP2
TEXACO INC	Nonvatex No 2
MOBIL OIL CO.	Mobiltex EP2

Gear Motor - Change oil after first week of operating and 1000 hr or six months thereafter whichever is earlier. See Table 2.

NOTE: Do not lubricate gear motor while unit is in operation.

Table 2 - Gear Case Oil

AMBIENT AIR TEMP (F)	SUV VISCOSITY SEC 210(F)	SAE NO	OIL
25 - 60	70 - 100	90	Texaco Meropa 2 or Equal
50 - 110	125 - 150	140	Texaco Meropa 5 or Equal

Drum Rollers - Lubricate every 500 hr or three months whichever is earlier (use Texaco Regal AFB2 or equal).

Sludge Pan Bearing - This bearing does not require lubrication.

CLEANING AND INSPECTION

Frequency of tank cleaning is determined by operating conditions, which may require draining and cleaning once each week. Clean all foreign matter from strainer, tank, perforated collection baskets and control electrodes. Each time tank is drained and cleaned, check the following:

1. Drive chain and sprockets for wear, alignment, and proper chain tension.
2. Rubber seal on entering side of drum for tightness. Make certain rubber is not damaged.

For replacement items use Carrier specified parts

Manufacturer reserves the right to change any product specifications without notice.